

LEONIDOV, N.K.

2

18
✓ Blast-Furnace with a Volume of 2000 Cubic Metres.
N. K. Leonidov. (Stat, 1956, Feb., 115-124). Factors taken
into account in design are reviewed and all aspects of the
installation and ancillary equipment including choice of
location are considered in detail.

max

729 INT

LEONIDOV, N.K.

Blast furnace with a capacity of 2000m³. Stal' 16 no.2:115-124
F '56. (MLRA 9:5)

1. Gipromez.

(Blast furnaces)

LEONIDOV, N., referent.

Blast furnace design in West Germany (From "Stahl and Eisen" no.26,
1954.) Stal' 16 no.8:757-760 Ag '56. (MLRA 9:10)
(Germany, West--Blast furnaces)

LEONIDOV, N., inzhener, laureat Stalinskoy premii; KOTOVA, Ye., inzhener.

Without casting molds and bloomings. Tekh.mol.24 no.1/2:34 Ja-7
'56. (Steel--Metallurgy) (MIRA 9:7)

ABRAMOV, V.S., kandidat tekhnicheskikh nauk; LEONIDOV, N.K., inzhener;
ARUTYUNOV, N.B., inzhener; KRASAVTSEV, N.I., kandidat
tekhnicheskikh nauk; GOKHMAN, Ye.V., kandidat ekonomicheskikh nauk;
YABLONSKAYA, L.V., redaktor izdatel'stva; ATTOPOVICH, M.K.,
tekhnicheskii redaktor

[Ferrous metallurgy of capitalist countries] Chernaya metallurgiya
kapitalisticheskikh stran. Moskva, Gos. nauchno-tekhn. izd-vo
lit-ry po chernoi i tsvetnoi metallurgii. Pt. 2. [Preparation of ore
for smelters and blast furnaces] Podgotovka rud k plavke i domennoye
proizvodstvo. 1957. 493 p. (MLRA 10:4)

1. Russia (1923- U.S.S.R.) Ministerstvo chernoy metallurgii.
Tekhnicheskoye upravleniye. Tsentral'nyy institut informatsii.
(Blast furnaces) (Smelting)

LEONIDOV, M.K.

LAKERNIK, Mark Moiseyevich; SEVRYUKOV, Nikolay Nikolayevich; BELYAYEV, A.I.,
prof., dokt.; retsenzent; VELLER, R.L., kand.tekhn.nauk; retsenzent;
VANYUKOV, A.V., retsenzent; KROL', L.Ya., retsenzent; SAMSONOV, G.V.,
retsenzent; LEONIDOV, N.K., inzh., retsenzent; ZHEMCHUZHINA, Ye.A.,
red.; EL'KINA, L.M., red.izdatel'stva; MIKHAYLOVA, V.V., tekhn.red.

[Metallurgy of nonferrous metals] Metallurgiya tsvetnykh metallov.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1957. 535 p. (MIRA 11:1)
(Nonferrous metals--Metallurgy)

LEONIDOV, N.K.

Blast furnace production in foreign countries. Metallurg 3 no.2:37-
39 F '57. (MLRA 10:4)

1. Nachal'nik domennogo sektora Gipromeza.
(Blast furnaces)

Leonidov, N.K.

From Foreign Metallurgical Literature.

381

PERIODICAL: "Stal'" (Steel), 1957, No.4, pp. 378 - 384.

Temperatures and heat currents in the blast furnace hearth. Review of literature on hearth cooling.
(4 references including 1 Russian).

By N. Leonidov.

p.378.

A new continuous merchant mill.

(From Stahl u. Eisen, No.10, p.81, 1956).

By V. F. Bur'yanov.

p.384.

Automatic detection of defects during the production of steel cables.

(From the Iron and Steel Engineer, 1956, No.2, p.187).

By A. B. Chelyustin.

p.384.

LEONIDOV N.K.

AUTHORS: Dashevskiy, Ya.I. and Leonidov, N.K.

133-6-6/33

TITLE: All Union Conference of Blast Furnace and Sinter Plant Operators. (Vsesoyuznoye Soveshchaniye Domenshchikov i Aglomeratchikov);

PERIODICAL: "Stal'" (Steel), 1957, No.6, pp.501-502 (USSR).

ABSTRACT: A short review of the Conference proceedings is given. The Conference took place on 26.3.1957 to 2.4.1957 in Dnepropetrovsk. Representatives of works, design and research institutes and other organisations as well as representatives from China, Czechoslovakia, Poland, Hungary, Rumania, Bulgaria, Korea and East Germany participated. 41 papers were presented. The blast furnace section discussed papers on: blast furnaces of 1719 and 2286m³ of the working volume; high temperature heating stoves, on high top pressure operation with oxygen enriched blast, operation of furnaces with experimental profiles, desulphurisation of iron outside blast furnaces, new methods of investigating blast furnace process, control of the gas stream in blast furnaces, automation of weighing cars and the use of dust impermeable cabins for them, experience in the operation of blast furnace equipment. The section on beneficiation and sintering of ores discussed papers on:

Card 1/5

All Union Conference of blast furnace and sinter plant operators. (Cont.) 133-6-6/33

improvements in the quality of ore concentrates, sintering and pelletising of fine concentrates, production of self-fluxing sinters, etc. Much attention was given to ore beneficiation and the production of self-fluxing sinter. The necessity of producing concentrates with an increased iron content (63-65%) and a decreased silica content (7-5%) was stressed. For an intensification of the sintering process the Conference made the following recommendations: a) additions of burned lime to sinter mixes which will necessitate the development of typical designs for the burning of limestone on sinter plants and adding burned lime to mixes under proper sanitary conditions; b) decrease of the size of materials used for sintering, which requires some form of heating screens; c) sintering mixes with the fuel content varying according to the bed height; d) improvement in screening of sinter; e) discontinuation of the water cooling of sinter (either to use hot sinter or to cool it in forced draught air coolers). The Conference also recommended the building of large experimental units for ore preparation in the Krivoi Rog Basin and in the East as well as the provision of additional equipment to the

Card 2/5

All Union Conference of blast furnace and sinter plant operators. (Cont.)

133-6-6/33

beneficiation-sinter plant of the Kmaruda for carrying out large scale experiments on the production of high grade concentrates. For testing and mastering of the pelletising process, the construction of appropriate equipment on YuGOK and the Sibelektrostal' Works is recommended. The problems of design of sinter and beneficiation plants and introduction of the newest types of equipment were reflected in the following basic decisions of the Conference: a) on complex automation of the sintering process; b) speeding up the design and construction of sinter strands with a surface area of 200 m^2 ; c) to carry out experiments on an industrial scale on pneumatic transport of hot return fines, flue dust and fuel in order to improve sanitary conditions on sinter plants; d) to increase the amount of air drawn through the sinter strand to $90 \text{ m}^3/\text{m}^2$ of sintering surface and above; e) the use of the most effective types of equipment (vibration feeders for strands, vibrational conveyor for hot return fines, electrostatic participators for cleaning of waste gas, etc.). In the field of preparation of manganese ores building of beneficiation sintering plants on the Nikopol'skiy and

Card 3/5

All Union Conference of blast furnace and sinter plant operators. (Cont.)

133-6-6/33

Chiaturskiy deposits was recommended. In the field of coke making the Conference recommended: building of coal driers on coal washeries, development of coke screening plants (by Giprokoks) with division of coke into size fractions and experimental smelting using ferrocoke. In the field of blast furnace operation the Conference proposed the following main developments: a decrease in slag volume by improvements in the beneficiation of ores and fluxes; 2) an improvement in the uniformity in respect of composition of burden materials and a decrease in the proportion of fines; 3) an increase in the basicity of sinter up to a complete elimination of limestone from the burden; 4) a decrease in the ash and sulphur contents in coke and an improvement in its physical properties; 5) an increase in the blast temperature above 1000 C; 6) smelting of a low manganese pig in Southern Works; 7) an increase in the top pressure above 1 atm, with the utilisation of the energy of the gas so compressed; and 8) the development of methods of controlling the gas stream in blast furnaces. Experimental smelting of ore and ore-coal pellets, fine

Card 4/5

All Union Conference of blast furnace and sinter plant operators. (Cont.)

133-6-6/33

fractions of sinter with blowing in natural and coke oven gas as well as desiliconisation and desulphurisation of pig iron outside blast furnaces on an industrial scale were also recommended. The Conference considered that tests with thin wall stack, cylindrical hearth, cooling by evaporation, pneumatic transport of flue dust, rapidly rotating distributor, aluminosilicate brick of a large size in the hearth, block bricks for checker work in heating stoves and conveyor belt delivery of materials into the furnace should be tested as soon as possible.

ASSOCIATION: MChM SSSR and Gipromet. (MChM SSSR i Gipromet).

AVAILABLE: Library of Congress
Card 5/5

LEONIDOV, N.

Temperature and heat flow in blast furnace hearth bottoms
(from foreign periodicals). Stal' 17 no.4:378-383 Ap '57.
(MLRA 10:5)

(Blast furnaces)

LEONIDOV, N.K., referent.

Desulfuration of pig iron outside of blast furnaces. Biul. TSHIICHM
no.21:54-57 '57. (MIRA 11:5)
(Cast iron—Metallurgy) (Desulfuration)

LEDNIDOV, N.K.

25(5)

PHASE I BOOK EXPLOITATION

SOV/1497

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957, t. 1 (Metallurgy of the USSR, 1917 - 1957, Vol. 1)
Moscow, Metallurgizdat, 1958. 745 p. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova;
Tech. Ed.: O. G. Bekker.

PURPOSE: The book is intended for scientific workers and engineers in metallurgical plants and in the machine-building industry. It may also be used by students in advanced courses in metallurgical vuzes.

COVERAGE: This collection of articles covers extensively practical and theoretical developments in Soviet metallurgy during the last 40 years. The material deals with the discovery and development of the major ore deposits and the growth of the metal industry in various parts of European and Asiatic USSR. Research institutes, laboratories, their location, and the names of the scientists and engineers involved are listed. Many papers contain so many references and names of various personalities that it was considered beyond the scope of the coverage of each article to list them. The authors claim that the processes, methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

Card 1/21

Metallurgy of the USSR (Cont.)

SOV/1497

methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

TABLE OF CONTENTS:

Introduction

3

Bardin, I.P., and V.V. Rikman. Ferrous Metallurgy in the USSR During the Soviet Regime

9

The authors outline the development of the ferrous industry in the USSR from 1913 to 1955. Annual production figures are given and include regional distribution. Achievements of the Five Year Plans are mentioned. There are 16 Soviet references.

Patkovskiy, A.B. Preparation of Raw Materials for Blast Furnaces

33

An outline is given of the development of ore beneficiating plants in the USSR. There are flow sheets and diagrams showing basic methods of ore concentration. Agglomeration of iron ore is discussed. The importance of metallurgical research is stressed. There are 15 Soviet and 3 English references.

Card 2/21

Metallurgy of the USSR (Cont.)

SOV/1497

Dvorin, S. S. . . . Coke and Chemical Industry in the USSR

61

The article gives the geographical location of coke plants and production figures from 1913 to 1955. The rate of development and the chemicals produced are listed.

Tsylev, L.M., and N.K. Leonidov. Development of Blast Furnace Production in USSR

86

The authors describe the increase of cast iron production from 1913 to 1956. As a result of intensive geological exploration new deposits of iron have been discovered in different parts of the USSR (locations given). A table lists the amount of pig iron and manganese produced. The article deals with the following subjects: fuel, design of blast furnaces and auxiliaries, dimensions of blast furnaces, loading arrangements, removal of iron and slag, air-blow installations, air-heating arrangements, gas cleaners, miscellaneous equipment, design features, and the last chapter discusses in detail the means of boosting production of pig iron. There are 21 Soviet references.

Card 3/21

Metallurgy of the USSR (Cont.)

SOV/1497

Kondakov, V.V. Basic Trends in Boosting Blast Furnace Production

115

The subject discussed in this paper is the relative efficiency of blast furnaces expressed in cubic meters of blast furnace volume per ton of metal produced per unit of time. It is claimed that due to intensive investigations of combustion processes and chemical reactions in the furnace, and in consequence, better preparation of the charge, Soviet blast furnaces have reached new peaks of efficiency and productivity. There are 16 Soviet references.

Bardin, I.P. and M.A. Shapovalov. Using Oxygen-enriched Blowing in Blast Furnaces

125

Experiments were conducted with oxygen-enriched blowing to increase the output of blast furnaces. The values obtained were compared to those published by US and Belgian sources. Depending on the ore and the cast iron to be produced, oxygen enrichment varied from 25 to 30 percent. In some instances savings of coke were achieved. The text contains numerous graphs and diagrams dealing with experimental work on enriched blowing. There are 16 references of which 15 are Soviet and 1 German.

Card 4/21

Metallurgy of the USSR (Cont.)

SOV/1497

Tsylev, L.M., and M.Ya. Ostroukhov. Development in the USSR of the Theory of Blast Furnace Process

147

The article deals with the design and operation of very large blast furnaces with 950 to 1300 cubic meter capacity. A number of experiments were carried out to study the operating regimes in those furnaces. The physical and chemical characteristics of the charge were studied to obtain optimum results and to insure free travel of the charge in the furnace and the permeability of the charge to gases. The thermal reactions were investigated and the results graphed. Reduction and slag formation as well as the combustion process proper were the object of intensive studies. The need for the proper control of blast furnace operation is stressed. It is claimed that at present Soviet scientists are attempting to develop a fully automated system for blast furnace operation which will automatically compensate for the variables involved in the process. There are 46 Soviet and 3 English references.

Polyakov, A.Yu., and A.M. Samarin. The Rise of Steel Production in the USSR 187
The article contains a review of the Soviet steel industry. Production figures for the Five Year Plans are given. The use of oxygen blowing in the production of converter steel is regarded as an important develop-

Card 5/21

Metallurgy of the USSR (Cont.)

SOV/1497

ment. A marked increase in the production of alloyed steel is scheduled for 1960. The development of automated processes in foundries is advocated. There are 4 Soviet references.

Khlebnikov, A.Ye. The Development of Open Hearth Technology

195

The paper deals with the development of the steel industry in the USSR. After World War II much work was done to determine the necessary amount of manganese to be used in the open hearth process and its effect on the sulphur content and the operating temperature of the hearth. It is claimed that to date Soviet open hearth production amounts to 2.5 million tons per annum. Some of the large open hearth furnaces have a capacity of 500 tons and are equipped with measuring and control devices to permit full automation of the thermal processes. Oxygen blowing is frequently used and some plants have introduced continuous casting and vacuum treatment of the molten metal in the ladle. The main trends are said to be the reduction of silicon and manganese content, better dephosphorization and the improvement of slag formation. There are 12 Soviet references.

Card 6/21

Metallurgy of the USSR (Cont.)

SOV/1497

Bardin, I.P., and L.M. Efimov. Use of Oxygen for the Intensification of the Open Hearth Process

211

Extensive experiments were carried out using oxygen blowing to speed up and improve the open hearth process. Oxygen was added to the air and forced directly into the bath. The pressure and the amount of oxygen were varied to determine optimum conditions. The results of the experiments are presented by means of tables and graphs. In conclusion it is stated that a number of plants already use oxygen blowing on an industrial scale and that towards the end of the present Five Year Plan about 40 percent of Soviet steel will be produced by this method. There are 10 references, 8 Soviet, 1 German and 1 English.

Veselkov, N.G., and M.A. Chernenko. The Development (Construction) of Open Hearth Furnace and Foundry Shop Design

250

The authors describe Soviet development in this industry since 1913 and mention achievements of the various Five Year Plans. New developments include the design of an open hearth furnace with 700 ton capacity, use of new high-calory fuels consisting of natural or coke gas mixed with fuel oil, and the mechanization of furnace operations. There are 10 Soviet references.

Card 7/ 21

Metallurgy of the USSR (Cont.)

SOV/1497

Glinkov, M.A. Development of Furnace Theory in the USSR

270

The author traces the development of scientific design of furnaces in the Soviet steel industry. The application of physical and chemical principles is presented in chronological order. The theoretical aspects of furnace operation and combustion processes are still under investigation. There are 52 references, 50 Soviet, 1 French, and 1 English.

Afanas'yev, S.G. Production of Converter Steel in the USSR

283

An outline is given of the development of converter steel production in the USSR. It is stated that present developments in the steel industry favor the converter process, especially the Thomas process, as it is suitable for handling high-phosphorus ores. The ores found in the Kerchensk area and the phosphoritic ores in the Kustanay area in Kazakhstan are treated by the Thomas process. Blowing with oxygen is said to have opened new possibilities for the converter process in the USSR. There are 26 Soviet references.

Edneral, F.P. Production of Electric Steel in the USSR

295

The author traces the development of electric steel production from the early twenties to the Sixth Five Year Plan. Production of steel is

Card 8/21

Metallurgy of the USSR (Cont.)

SOV/1497

to be increased by 79 percent as compared to the 1955 level. The use of oxygen is also to be increased. New electric furnaces of 180 ton capacity and electromagnetic transfer of metal are to be designed. The introduction of mechanization of furnace operations is to be speeded up. At present the largest furnace in the USSR has a capacity of 40 tons as compared to American electric furnaces of 180 ton capacity, and the author stresses the fact that the USSR lags far behind USA in this field. New furnaces of 80 ton capacity are to be introduced shortly. There are 3 Soviet references.

Okorokov, N.V. Relationship Between the Main Parameters and the Coefficient of Production of Electric Furnaces

310

The author investigated the relationship between the capacity or size of the furnace and the fundamental coefficient of production which is defined as the "productivity per time unit and the specific electric power consumption per unit of production." These two factors depend on the relative position of the object to be heated, the source of heat, and the work cycle of the furnace. These relationships were calculated according to the numerous formulas and graphs contained in the text.

Card 9/21

Metallurgy of the USSR (Cont.)

SOV/1497

The results of these theoretical calculations coincide with the actual performance data of some foreign electric furnaces. There are 7 references, 6 Soviet and 1 German.

Gostev, K.I. Continuous Steel Casting

329

The author states that intensive experimental and development work in continuous steel casting techniques has been going on for a number of years and that now continuous steel ingot casting is gaining popularity in Soviet industry. The author describes a number of vertical, inclined and horizontal systems with movable and stationary molds, and each of these systems is illustrated. There are 8 references, 5 English, 1 German, and 2 Soviet.

Polyakov, A.Yu., and A.M. Samarin. Development of the Theoretical Principles of Steel Making

350

Soviet scientists are reported to have done extensive theoretical studies of the physical and chemical processes which take place in the liquid stage of steel making. Reaction between oxygen and carbon in the steel bath has been the subject of numerous studies. The thermodynamic and

Card 10/21

Metallurgy of the USSR (Cont.)

SOV/1497

kinetic behavior of slags and metal has also been studied. The present trend is to apply new scientific achievements in physics and electronics to control and check steel making processes by a fully automatic system on an industrial scale. There are 50 Soviet references.

Filippov, S.I. Development of the Science of the Kinetics of Steel Making Processes in the USSR

361

It is stated that the study of metallurgical processes in the USSR is based on the classic principles of thermodynamics. The author gives numerous equations, formulas and graphs to illustrate his point. Some of these calculations explain certain regularities of oxidizing reactions. For general application of these formulas it is necessary first to obtain empirically the constants for the rate of the chemical reactions. There are 34 references, 24 Soviet, 7 English, and 3 German.

Krasnykh, I.F., and P.A. Sakharuk. The Technology of Producing Ferroalloys

381

A description is given of a number of ferroalloys currently produced in the USSR. The most important is said to be ferrosilicon which requires 52 percent of electric power used in the ferroalloy industry. Other alloys

Card 11/21

Metallurgy of the USSR (Cont.)

SOV/1497

listed include ferrochromium, ferromanganese, ferrotitanium, ferrovanadium and ferromolybdenum with over 90 percent molybdenum. As a source of titanium the Soviets use perovskite^{ore} to obtain concentrates of 48-51 percent titanium oxide. The source of vanadium are various titaniferous magnetites. In conclusion it is stated that more experiments and better methods are needed to improve the production of ferroalloys. There are 40 references, 37 Soviet and 3 English.

Pervushin, S.A. Nonferrous Metallurgy Under the Soviet Regime

399

The author gives a historical review of the development of the non-ferrous industry since the October Revolution. Production figures and targets of the five year plans are quoted. The locations of new nonferrous metal deposits are listed. There are 11 Soviet references.

Glembotskiy, V.A. Concentration of Nonferrous Ores and Ores of Rare Metals

415

Following a brief historical review the author discusses methods of ore concentration such as flotation, gravity separation, magnetic separation, etc. It is claimed that Soviet scientists have done a great deal of work on the theory of flotation based on the latest achievements in physical

Card 12/21

SOV/1497

Metallurgy of the USSR (Cont.)

chemistry, geochemistry, organic chemistry, crystallography and solid state physics. Flow sheets with detailed descriptions are given for the flotation of a number of sulphides. Special methods aimed at the recovery of various accessory minerals of economic importance are presented. It is claimed that the problem of cassiterite flotation has been satisfactorily solved by Soviet metallurgists. There are 8 Soviet references.

448

Chizhikov, D.M. Nonferrous Metallurgy

The article contains a historical review of the nonferrous metallurgy in industry in USSR followed by a list of the more important of research and metallurgical institutes. A description is given of the methods of treating copper, lead, zinc, aluminum, nickel, and tin. Electrochemical methods and the use of oxygen-enriched air are regarded as the important new developments in the metallurgical industry.

496

Frents, G.S. Roasting Sulphide Concentrates of Heavy Nonferrous Metals

This paper deals with the various aspects of roasting sulphide concentrates. The mechanism of the oxidation of sulphides has been the object of intensive studies. Sintering of sulphides is mentioned. A

Card 13/21

Metallurgy of the USSR (Cont.)

SOV/1497

Production figures are given. It is planned to use concentrates of sillimanite for the production of aluminum and silumin. Various method of aluminum production are discussed. There are 76 Soviet references.

Gulyanitskiy, B.S. The Metallurgy of Magnesium

552

Russian geological exploration for magnesium minerals is said to have started only under the Soviet regime. The Verkhne-Kamsk deposits of carnallite are reported to amount to billions of tons. A number of saline lakes are listed as another valuable source of raw material. The bays of the Sea of Azov and of the Caspian Sea are reported to contain enough salts for commercial exploitation. Deposits of dolomite are found in most industrial areas of the USSR. Currently three methods of producing magnesium are used in the USSR: 1) electrolysis 2) reduction of magnesium oxide by ferrosilicon, and 3) reduction of magnesium oxide by carbon. Other methods are under development which will take advantage of local conditions and streamline the production of magnesium. There are 89 Soviet references.

Sazhin, N.P. Development of the Metallurgy of Rare and Minor Metals in USSR 570

Rare metals are classified as follows: 1. Light rare metals Li, Rb, Cs, Be, 2. Rare earths - all lanthanides of Sc, Y, 3. Scattered rare metals Ga, In, Tl, Ge, 4. High temperature rare metals Ti, Zr, Hf, V, Nb, Ta, Mo, N, Re, 5. Radioactive metals Ra and all actinoid elements. Mercury, tin,

Card 15/21

Metallurgy of the USSR (Cont.)

SOV/1497

antimony and bismuth are called "minor" or "junior" metals. The various methods developed to produce and refine these metals are described. It appears that production of some of the metals, particularly the semiconductors, is still in the laboratory stage. The need to develop sufficient quantities of high-purity reagents is stressed. There are 69 Soviet references.

Bardin, I.P., and V.A. Reznichenko. Investigations of the Metallurgy of Titanium

583

The article covers experiments carried out in the USSR in the field of titanium metallurgy. Formulas and graphs explain the various reactions in the treatment of titanium ores and compounds. The following methods are currently used to obtain metallic titanium: 1) thermic method of reducing titanium dioxide with calcium and calcium hydride 2) processes based on the decomposition of lower titanium chlorides obtained by the reduction of titanium tetrachloride 3) electrolysis of titanium chlorides, oxides, and fluorides. Some titanium is being recovered from scrap alloys. The need for increased production of metallic titanium and titanium sponge is emphasized. There are 49 references, 37 Soviet, 11 English, and 1 German.

Card 16/21

Metallurgy of the USSR (Cont.)

SOV/1497

Melent'yev, B.N. Investigations of Extraction of Titanium Dioxide From Complex Titaniferous Raw Materials

624

To satisfy the increasing demands for titanium oxides the paint, rubber, paper, and textile industries, new sources and methods had to be found to produce this material. Titaniferous slags are a common source of titanium as extraction is easier than from ilmenite, and there are very large reserves of titaniferous magnetites available in the USSR. The more complex ores of titanium are loparite (complex titanium-niobium rare earths), perovskite, and sphene. Soviet scientists are said to have developed laboratory methods for obtaining titanium oxides. The text contains basic formulas and chemical equations. It is stated in conclusion that more research is needed in this field to satisfy industrial requirements. The author claims that it is imperative to improve methods of extracting from titaniferous slags in order to obtain a concentration of TiO_2 of not less than 75 percent. There are 19 Soviet references.

Kazayn, A.A., and A.D. Khromov. Investigations of the Electrochemistry of Titanium

633

The All-Union Institute for aluminum and magnesium conducted various experiments on electrolytic extraction of titanium from titanium tetrachloride. As a result several methods were developed to produce electro-

Card 17/21

Metallurgy of the USSR (Cont.)

SOV/1497

litically high purity metallic titanium comparable to that produced by the thermic method. There is 1 Soviet reference.

Petrov, D.A. Metallurgy of Semiconductors

638

Germanium and silicon are regarded as the two most important semiconductor materials. As the properties of semiconductors are related to impurities, new methods had to be developed to obtain high-purity crystals of Si and Ge. One method used was to break up by thermal processes the less stable compounds of these elements, in this case SiJ_4 and SiH_4 , the latter being easier to split at lower temperatures. Another method involves the reduction of the compound by an active element such as hydrogen. Other approaches such as crystallization are mentioned. A method of obtaining monocrystals proposed by Chokhral'skiy in Poland is explained as is its application in the construction of a composition diagram. In conclusion it is pointed out that further experiments in this field are necessary to discover the properties of new materials, their compounds and solid solutions. There are 15 references, 13 Soviet, 1 English, and 1 French.

Zvyagintsev, O.Ye. The Metallurgy of Noble Metals

656

The article deals with the extraction and processing of gold, platinum and several other rare metals. Experimental work of this nature is

Card 18/21

Metallurgy of the USSR (Cont.)

SOV/1497

presently centered in Moscow at the Nigrizoloto Institute. Gold extracting is done by amalgamation, cyaniding, and chlorination. Another method involves the smelting of gold-bearing copper, lead, and nickel ores with subsequent extraction of gold by electrolysis. Cyaniding is the chief method of gold extraction at present. Activated charcoal is used to precipitate noble metals from the solution and also to adsorb metals which are later recovered by flotation. To obtain high-purity platinum powder, metallurgical methods are most commonly used. Platinum wire for thermocouples, wires and sheets of iridium, rhodium, and ruthenium are manufactured by this method. One of the future tasks is the discovery of new applications for platinum, ruthenium, and palladium in the field of chemistry as catalysts, in electrical engineering as semiconductors and in other fields. There are 53 Soviet references.

Vol'skiy, A.N. Theoretical Principles of Nonferrous Metallurgy

668

Many theoretical aspects of nonferrous metallurgy have been investigated by Soviet engineers and technicians. Over a hundred personalities are mentioned who have made contributions to this field of metallurgy. Some of the work includes studies of the thermodynamics of reactions of non-ferrous metals, the theory of roasting, smelting, and the reduction of metals. Other investigators explored the chemical and physical properties

Card 19/21

Metallurgy of the USSR (Cont.)

SOV/1497

of slags, thermic processes and pyrometallurgy. The electrolysis of molten salts and aqueous solutions was the object of many studies. The author states that only a part of the work currently done in nonferrous metallurgy has been mentioned in this paper. There are 331 Soviet references.

Yesin, O. A. Development of the Theory of Liquid Slags in the USSR 701
The rapid development of modern metallurgy called for a more thorough knowledge of the composition, behavior, and reaction of molten slags in metallurgical processes. Starting with this premise the author goes on to relate the various theories developed and experiments performed by Soviet metallurgists. The molecular theory is said to have dominated the thinking of many outstanding Soviet scientists such as Baykov, Sokolov, Pavlov, Grym Grzhimaylo, et al. This theory has been complemented by the introduction of the ionic concept, and later, by the ionic theory of liquid slags. Numerous formulas, graphs, and equations explain and confirm the fundamentals of these theories. The ionic theory was successfully applied in the electrolysis of molten metals to extract various elements. The author, in cooperation with Diyev,

Card 20/21

Metallurgy of the USSR (Cont.)

SOV/1497

Chermak, and Lyumkis, developed a method based on this theory for the recovery of nickel and cobalt from molten slags. There are 91 references, 83 Soviet and 1 English.

Kulikov, I.S. The Use of Radioactive Isotopes

729

The use of radioactive isotopes in Soviet metallurgy dates back to 1948. The commercial production of mass spectrometers made possible wide application of this method. Gamma rays are used to measure the thickness of metals and to measure the thickness of metallic coatings on sheet metal. Radioactive isotopes are used to measure the density of liquid phases and suspensions. The radiation of zinc with gamma rays CO^{60} is said to increase its hardness. In 1952 Bogdanov and other scientists developed a method of analysis based on the reflection and scattering of gamma particles. A modification of this method may be used to analyze binary compounds. There are 49 Soviet references.

AVAILABLE: Library of Congress

GO/fal
4-18-59

Card 21/21

LEONIDOV, N.K., inzh.

Thin-walled structures of blast furnace shafts. Bul. TSNICEM no.4:
1-6 '58.

(MIRA 11:5)

(Blast furnaces)

LEONIDOV, N.K., referent.

Automatic blast control in blast furnace tuyeres. Bul. TSNIICEM
no.4:52-55 '58. (MIRA 11:5)
(Blast furnaces)

LEONIDOV, N.K., referent.

Producing solid iron-ore pellets. Biul. TSNIICEM no.6:53 '58.
(Iron--Metallurgy) (MIRA 11:5)

GRUZINOV, Vladimir Konstantinovich; LEONIDOV, N.K., kand.tekhn.nauk,
retsenzent; GRIGOR'YEV, G.G., kand.tekhn.nauk, red.; DUGINA,
N.A., tekhn.red.

[Mechanical equipment of blast furnace plants] Mekhanicheskoe
oborudovanie domennykh tsekhov. Izd.2., perer. Moskva, Gos.
nauchno-tekhn.izd-vo mashinostroit.lit-ry. Pt.2. 1959. 320 p.
'MIRA 12:9)

(Blast furnaces--Equipment and supplies)

BEYZERMAN, D.Z., inzh.; DZHIOYEV, I.M., inzh.; GEZENTSVEY, I.A., inzh.;
PURYGIN, L.Ye., inzh.; LEONIDOV, N.K., inzh., nauchnyy red.;
VDOVENKO, Z.I., inzh., red.izd-va; RYAZANOV, P.Ye., tekhn.red.

[Construction of a blast furnace with a capacity of 1719 m³]
Stroitel'stvo domennoi pechi ob'emom 1719 M³. Moskva, Gos.izd-vo
lit-ry po stroit., arkhitekt. i stroit.materialam, 1960. 140 p.
(MIRA 13:9)

(Blast furnaces--Design and construction)

LEONIDOV, N.

Evaporation cooling. Nauka i zhizn' 27 no.5:79 My '60.
(MIRA 13:6)

1. Nachal'nik domennogo sektora Gosudarstvennogo instituta
proyektirovaniya metallurgicheskikh zavodov.
(Metallurgical furnaces--Cooling)

SEROSTANOV, Grigoriy Ivanovich, kand. tekhn. nauk; LEONIDOV, N.K., inzh.,
nauchnyy red.; SKVORTSOVA, I.P., red. izd-va; SHLENSON, P.G., tekhn.
red.

[Mounting structural parts of a blast furnace with the BK-1425 crane]
Montazh konstruktsii doménnoi pechi kranom BK-1425. Moskva, Gos. izd-
vo lit-ry po stroit. arkhitekt. i stroit. materialam, 1961. 37 p.
(MIRA 14:7)

(Blast furnaces—Design and construction)
(Cranes, derricks, etc.)

PHASE I BOOK EXPLOITATION SOV/5362

Leonidov, Nikolay Konstantinovich

Usovershenstvovaniye konstruktsiy domennykh pechey (Improvements in the Construction of Blast Furnaces) Moscow, Metallurgizdat, 1961. 57 p. 2,300 copies printed.

Ed.: N.B. Arutyunov; Ed. of Publishing House: A.A. Vagin; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This booklet is intended for technical personnel of the metallurgical and machine-building industries, and for personnel of sovnarkhozes and planning and design organizations.

COVERAGE: The trend in the development of blast furnaces in the USSR is discussed. Large-capacity blast furnaces, their auxiliaries, and equipment, planned for construction during the current Seven-Year Plan for the development of the national economy, are described. The following are also discussed: the use of natural gas in pig-iron production, the increase of blast temperature and the mechanization and automation of processes. Drawings and tables are provided. No personalities are mentioned. There are no references.

Card 1/2

LEONIDOV, N.K., referent

Blast furnace with gas gauge pressure in the furnace throat of 2.8
[from "Iron and Coal Trades Review," no. 4772, 1960; "Iron and
Steel Engineer," no. 11, 1959]. Biul. TSIICHM no.10:47-51 '60.
(MIRA 15:4)

(United States--Blast furnaces)

LEONIDOV, N.K.

Refractory materials for laying the well of a blast furnace.
Ogneupory 26 no.6:273-276 '61. (MIRA 14:7)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu
metallurgicheskikh zavodov.
(Blast furnaces)
(Refractory materials)

ARUTYUNOV, N.B.; LEONIDOV, N.K.; GOL'DIN, Ya.A., glav. red.; POLOTSK, S.M., red.; MIKHAYLOVA, V.V.; tekhn. red.

[Technological progress in ferrous metallurgy; blast furnace practice] Tekhnicheskii progress v chernoi metallurgii SSSR; domennoe proizvodstvo. Moskva, Gos. nauchno-tekhn. izd-vo litery po chernoi i tsvetnoi metallurgii, 1961. 480 p. (MIRA 14:8)

1. Direktor Tsentral'nogo instituta informatsii chernoy metallurgii (for Arutyunov).
2. Tsentral'nyy institut informatsii chernoy metallurgii i Gosudarstvennyy institut po proyektirovaniyu metallurgicheskikh zavodov (for Leonidov)
(Blast furnaces)

LEONIDOV, N.K.

Modern methods for the intensification of the blast-furnace
process. Biul.tekh.-ekon.inform. no.7:87-90 '61. (MIRA 14:8)
(Blast furnaces—Technological innovations)

GESELEV, M.M., inzh.; LEONIDOV, N.K., inzh.; TEPER, V.S., inzh.

Improving safe working conditions in blast-furnace plants. Bez.truda
v prom. 6 no.1:15-16 Ja '62. (MIRA 15:1)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu
metallurgicheskikh zavodov.
(Blast furnaces--Safety measures)

LEONIDOV, N.K.; GOKHMAN, Yu.I.

Use of liquid and pulverized fuel in blast furnaces abroad. Biul.tekh.-
ekon.inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. no.7:86-88 '62.
(MIRA 15:7)

(Blast furnaces)

LEONIDOV, N.K.

Blast furnace with a capacity of 2700 m³. Stal' 22 no.11:972-980
N '62. (MIRA 15:11)

1. Gosudarstvennyy institut proyektirovaniya metallurgicheskikh
zavodov.

(Blast furnaces--Design and construction)

LEONIDOV, N.K.; KOCHINEV, Ye.V.

Conference on the design of operating blast furnaces with a capacity of 2000 m³. Stal' 22 no.9:788-790 S '62.

(MIRA 15:11)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallurgicheskikh zavodov.

(Blast furnaces--Congresses)

LEONIDOV, N.K.

Expansion of blast furnace construction in the U.S.S.R. Stal'
22 no.11:968-971 N '62. (MIRA 15:11)

1. Gosudarstvennyy institut proyektirovaniya metallurgicheskikh
zavodov.

(Blast furnaces—Design and construction)

LEONIDOV, N. K.

Use of crude and converted natural gas in blast-furnaces. Biul.
tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh.
inform. no. 12:4-9 '62. (MIRA 16:1)

(Gas, Natural) (Blast furnaces)

LEONIDCV, N.K.

Refractories for the masonry of blast furnace wells. Analele
metalurgie 16 no.3:177-180 J1-S '62.

LEONIDOV, N.K.; DAN'SHIN, V.V.

"Repair of blast furnaces" by A.P.Gora, A.A.Zil'berman.
Reviewed by N.K.Leonidov, V.V.Dan'shin. Stal' 22 no.10:
890-891 0'62. (MIRA 15:10)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu
metallurgicheskikh zavodov.

(Blast furnaces--Maintenance and repair)
(Gora, A.P.) (Zil'berman, A.A.)

LEONIDOV, N.K.; MOSHKINA, G.P.; TEPER, V.K.

Blasting solid fuel into the hearth of a blast furnace. Biul.tekh.-
ekon.inform.Gos.nauch.-issl.inst.nauch. i tekhn.inform. 16 no.11:85-
89 '63. (MIRA 16:11)

LEONIDOV, N.K.; SLIZHIKOVA, L.Ye.; TEPER, V.S.

Effect of the coke quality on the indices of blast-furnace smelt-
ing. Biul.tekh.-ekon.inform.Gos.nauch.vissl.inst.nauch. i tekhn.
inform. 16 no.10:98-102 '63. (MIRA 16:11)

LEONIDOV, N.K.; DAN'SHIN, V.V.

Equipment of blast furnaces with a capacity of 2700 m³.
Stal' 23 no.2:104-115 F '63. (MIRA 16:2)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallurgicheskikh zavodov.
(Blast furnaces--Equipment and supplies)

LEONIDOV, N.K.; MOSHKINA, G.P.; TEPER, V.S.

Coke gas blast into blast furnaces. Biul. tekhn.-ekon. inform.
Gos. nauch.-issl. inst. nauch. i tekhn. inform. 17 no.2:83-86
'64. (MIRA 17:6)

LEONIDOV, N.K.; MOLCHANOV, A.N.

Determining the size of runners for pig iron and slag.
Stal' 24 no.1:18-21 Ja '64. (MIRA 17:2)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu
metallurgicheskikh zavodov.

BOLGTIN, A.Ye.; YERIKHEMION, I.Yu.; LEONIDOV, N.K.; MARKOV, A.V.

Processing and removal of blast furnace slag without ladles.

Stal' 24 no.2:116-118 F '64.

(MFA 17:9)

LEONIDOV, N.K.; KIRICHENKO, N.D.

Construction and durability of a blast-furnace hearth and well.

Motallurg 9 no.12:13-15 D '64.

(MIRA 18:2)

LEONIDOV, N.K.; GOKHMAN, Yu.I.; TARASOV, B.Ye.

Effectiveness of blowing various reagents into a blast furnace.
Stal' 24 no.7:584-587 J1 '64. (MIRA 18:1)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallurgicheskikh zavodov.

LEONIDOV, N.K., doktor tekhn. nauk; KOTOVA, Ye.V., inzh.

Problems in designing high-temperature preheaters of blast-furnace air. Stal' 25 no.10:873-879 O '65. (MIRA 18:11)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallurgicheskikh zavodov.

LEONIDOV, O.

Dream of an agronomist. Znan. ta pratsia no. 4:14 Ap '61.
(MIRA 14:5)
(Ukraine--Potatoes) (Agricultural machinery)

LEONIDOV, P.A.; GOLUBEV, N.M.

Innovators of textile enterprises of Ivanovo Province. Tekst.
prom. 14 no.10:39-44 0 '54. (MLRA 7:10)
(Ivanovo Province--Textile industry) (Textile industry--
Ivanovo Province)

RABINOVICH, M.P.; RAKHIMOV, D.Z.; LEONIDOV, P.I., red.; GALKINA, V.N.,
tekhn.red.

[Organization of business accounting in individual production
units of collective and state farms] Organizatsiia vnutri-
khoziaistvennogo rascheta v kolkhozakh i sovkhozakh. Kazan',
Tatarskoe knizhnoe izd-vo, 1960. 49 p. (MIRA 14:1)
(Tatar A.S.S.R.--Agriculture--Finance)

VOLKOV, Yu.A.; KURKIN, M.I., red.; LEONIDOV, P.I., red.; KHUSNUTDINOV, Sh.S., tekh. red.

[Ways of raising the economic effectiveness of fruit culture; based on the example of the collective farms of Verkhniy Uslon District Tatar A.S.S.R.] Puti povysheniia ekonomicheskoi effektivnosti sadovodstva; na primerakh kolkhovov Verkhne-Uslonskogo raiona TASSR. Pod red. M.I. Kurkina. Kazan', Tatarskoe knizhnoe izd-vo, 1960. 53 p.
(MIRA 14:9)

(Tatar A.S.S.R.—Fruit culture)

5(3)

PHASE I BOOK EXPLOITATION

SOV/1975

Leonidov, Rem Leonidovich

Nezamenimyye zameniteli ("Unsubstitutable" Substitutes) Moscow, Gospolitizdat, 1958. 63 p. 75,000 copies printed.

Ed.: V. Podgornova; Tech. Ed.: N. Troyanovskaya.

PURPOSE: This book is intended for the general public and may be used by students for orientation in the chemistry of synthetic materials.

COVERAGE: The book describes, in simplified form, such concepts and phenomena as polymerization, co- and cross-polymerization, the thermoplasticity or thermoreactivity of plastics, isoprene and other synthetic rubbers, synthetic wool, acetate silk, and other aspects of the chemistry of high molecular compounds. No personalities are mentioned. There are no references.

Card 1/2

"Unsubstitutable" Substitutes

SOV/1975

TABLE OF CONTENTS:

Chemistry of Large Molecules	6
What Are Plastics?	11
Rivals of Metal	19
Chemical Fiber	30
Synthetic Rubber	40
Descendants of Two Chemistries [Silicon Organic Compounds]	49
Houses of the Future	56
Plastics in Medicine	61
AVAILABLE: Library of Congress (TP 986.A2L34)	

Card 2/2

TM/dfh
7-27-59

LEONIDOV, S.

businessmen are for large-scale commerce between West and East.
Vnesh. torg. 42 no.10:34-37 '62. (MIRA 15:10)
(Austria--Commerce)

LEONIDOV, S.A., mayor med. sluzhby

~~Effect of atmospheric electricity on the human body.~~ Voen.med.zhur.
no.3:92-93 Mr '57. (MIRA 11:3)
(ELECTRICITY--PHYSIOLOGICAL EFFECT) (ATMOSPHERIC ELECTRICITY)

LEONIDOV, V.

Uskorit' stroitel'stvo zdanií dlia sel'skikh otdelenii sviazi (Khar'kovskaia, Stalinskaia i dr. oblasti). [To speed up the construction of buildings for rural communication branches (In Kharkov, Stalingrad and other provinces)] (Vestnik sviazi. Pochta. 1947, no. 8, p. 14).

DLC: HE7.V44

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress Reference Department, Washington, 1952, Unclassified.

1. LEONIDOV, V.
2. USSR (600)
4. Raw Materials - United States
7. American plan for plundering the world's raw material resources ("A report to the President by the President's Material Policy Commission" in English). Reviewed by V. Leonidov). Vop. ekon. No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

LEONIDOV, V.

The Pugwash movement is against nuclear war. NTO 2 no.8:61-62 2g
'60. (MIRA 13:10)

(Peace)

LEONIDOV, V.

Important national affair. HTO 2 no.10:52-53 0 '60.

(MIRA 13:10)

(Industrial management--Information services)

LEONIDOV, V.

Birthday of the Egorov lock collar. Znan.sila 35 no.6:19 Je
'60. (MIRA 13:7)

(Fastenings)

LEONIDOV, V.I.; ZHIGACH, K.F.; MUKHIN, L.K.

Drilling wells for oil under the complex geological conditions of
Turkmenia. Izv. vys. ucheb. zav.; neft' i gaz 4 no.12:37-41 '61.
(MIRA 16:12)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni akademika I.M.Gubkina.

LEONIDOV, V.I.; MUKHIN, L.K.

Specific conditions causing caving during oil well drilling in
Turkmenia. Trudy MINKHIGP no.35:120-126 '61. (MIRA 14:11)
(Turkmenistan--Oil well drilling fluids)

LEONIDOV, V.I.; MUKHIN, L.K.; ZHIGACH, K.F.

Improving the method of studying the effect of drilling fluids
on the strength of clay rocks. Izv. vys. ucheb. zav.; neft'
i gaz 4 no.2:25-30 '61. (MIRA 15:5)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni akademika I.M.Gubkina.
(Oil well drilling fluids) (Clay)

LEONIDOV, V.I.; ZHIGACH, K.F.; MUKHIN, L.K.

Effect of pressure and temperature on the interaction of flushing fluids and clay rocks. Izv.vys.ucheb. zav.;neft' i gaz 5 no.5: 35-38 '62. (MIRA 16:5)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika I.M.Gubkina.
(Clay) (Oil well drilling fluids)

YEGOROV, V.A., gornyy inzh.; LEONIDOV, V.V., gornyy inzh.

Fire safety in the Donets Basin coal mines. Ugol' Ukr. 6
no.6:38-39 Je '62. (MIRA 15:7)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya po
gornospasatel'nomu delu.
(Donets Basin--Coal mines and mining--Fires and fire prevention)

86157

S/076/60/034/008/033/039/XX
B015/B063

21,3100 (1138, 1496, 1565)

AUTHORS: Leonidov, V. Ya., Rezhukhina, T. N., and Bereznikova, I. A.

TITLE: Specific Heat of Calcium and Barium Uranates (VI) at High Temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 8, pp. 1862-1865

TEXT: The present work follows a series of experiments on the thermodynamic properties of the chromates, molybdates, and tungstates of divalent metals (Refs. 1-4). Its principal purpose was to compare the thermodynamic properties of these compounds with those of the uranates of divalent metals. The mixing method was used to measure the specific heat of CaUO_4 and BaUO_4 with a compact calorimeter. The measurements were made between 588° and 1134°K , the lower temperature being 293°K . A detailed description of measurement and calorimeter is given in M. M. Popov's manual (Ref. 8) and in a paper by L. A. Zharkova and T. N. Rezhukhina (Ref. 2). The sample was heated in a Pt ampoule placed in a vertical furnace above the calorimeter. The specific heat was calculated from the

Card 1/4

Specific Heat of Calcium and Barium Uranates
(VI) at High Temperatures

86157
S/076/60/034/008/033/039/XX
B015/B063

difference of the quantities of heat introduced into the calorimeter with a full and with an empty ampoule. The mean values obtained are listed in Table 2. The specific heat of BaUO_4 in the above temperature range was found to be a linear function of temperature. In the case of CaUO_4 this function is linear only up to 1022°K , changes abruptly between 1022° and 1027°K , and becomes again linear. In this range there occurs a phase transition with a heat of 220 cal/mole . Finally, equations are given for the calculation of the mean and the actual specific heat for the temperature range considered: CaUO_4 (I) (below the point of transition):

$$\begin{aligned} \bar{c}_p &= 0.08555 + 1.636 \cdot 10^{-5}T, \quad \bar{C}_p = 29.27 + 5.60 \cdot 10^{-3}T; \quad \text{CaUO}_4 \text{ (II)} \text{ (above} \\ &\text{the point of transition): } \bar{c}_p = 0.08435 + 1.839 \cdot 10^{-5}T, \quad \bar{C}_p = 28.86 \\ &+ 6.29 \cdot 10^{-3}T; \quad \text{BaUO}_4: \bar{c}_p = 0.06929 + 1.094 \cdot 10^{-5}T, \quad \bar{C}_p = 30.45 + 4.81 \cdot 10^{-3}T; \\ &\text{and CaUO}_4 \text{ (I)}: c_p = 0.08075 + 3.272 \cdot 10^{-5}T, \quad C_p = 27.63 + 11.19 \cdot 10^{-5}T, \\ &\text{CaUO}_4 \text{ (II)}: c_p = 0.07895 + 3.678 \cdot 10^{-5}T, \quad C_p = 27.01 + 12.58 \cdot 10^{-3}T; \\ &\text{Card 2/4} \end{aligned}$$

86357

Specific Heat of Calcium and Barium Uranates (VI) at High Temperatures S/076/60/034/008/033/039/XX
3015/3063

BaUO₄: $c_p = 0.06608 + 2.189 \cdot 10^{-5}T$; c_p 29.04 + $9.62 \cdot 10^{-3}T$. Professor S. M. Skuratov is thanked for advice. There are 1 figure, 2 tables, and 9 references: 7 Soviet and 2 US.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: December 20, 1958

Tab. 2

Таблица 2

Средняя удельная теплоемкость моноуранатов кальция и бария

1 Количество ураната в ампуле.	2 Температурный интервал измер. теплоемкости, °K	3 Подъем температуры калориметра ** (сопротивление платинового термометра, Ω)	4 Тепло, внесенное солью в калориметр, кал	5 Средняя уд. теплоемкость ураната	
				из опыта	по уравнению
CaUO ₄					
4,9463	588,63—293,07	0,05905	139,22	0,09523	0,09518
	784,57—293,00	0,0863	239,43	0,09835	0,09838

Card 3/4

86157

884,08-293,00	0,1176	292,41	0,08991	0,10001	/034/008/033/039/XX
984,94-293,00	0,1400	347,75	0,10160	0,10166	
1008,97-293,00	0,1455	361,41	0,10206	0,10205	
1022,08-293,04	0,14865	369,23	0,10230	0,10227	
1027,45-293,03	0,1510	375,07	0,10325	0,10324	
1034,25-293,02	0,1526	379,04	0,10338	0,10336	
1084,00-293,01	0,16415	407,73	0,10421	0,10428	
1133,47-293,06	0,1761	437,41	0,10522	0,10519	

BaUO₄

6,5895	588,70-293,26	0,0594	147,47	0,07575	0,07573
	684,85-293,48	0,07975	198,09	0,07681	0,07679
	784,43-293,12	0,1015	252,12	0,07787	0,07788
	884,08-293,09	0,1237	307,26	0,07890	0,07897
	984,89-293,02	0,14695	365,01	0,08006	0,08007
	1083,66-293,07	0,1703	423,01	0,08120	0,08115

Text to the table: Table 2 - Mean Specific Heat of Calcium and Barium Monouranates; 1 - Amount of uranate in the ampoule expressed in g;
2 - Temperature range of specific heat measurement expressed in K;
3 - Temperature rise of the calorimeter (resistance of the Pt thermometer expressed in ohms); 4 - Quantity of heat introduced into the calorimeter with the salt, expressed in cal; 5 - Mean specific heat of uranate;
6 - Measured; 7 - Calculated

Card 4/4

KORNILOV, A. N.; LEONIDOV, V. Ya.; SKURATOV, S. M.

Standard heats of formation of the higher carbides of niobium and tantalum. Vest. Mosk. un. Ser. 2: Khim. 16 [1.e.17], no.6: 48-50 N-D '62. (MIRA 16:1)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

(Niobium carbide)	(Tantalum carbide)
(Heat of formation)	

LEONIDOV, V.Ya.; BARSKIY, Yu.P.; KHITAROV, N.I.

Determination of the heat capacity of kyanite and quartz by the method of thermal analysis. Geokhimiia no.5:414-419 My '64. (MIRA 18:7)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R. and Scientific Research Institute of Building Ceramics, Moscow.

38108

S/020/62/144/002/020/028
B101/B144

18.1152
21.2100
AUTHORS:

Kornilov, A. N., Leonidov, V. Ya., and Skuratov, S. M.

TITLE:

Standard heats of formation of niobium pentoxide and tantalum pentoxide

PERIODICAL:

Akademiya nauk SSSR. Doklady, v. 144, no. 2, 1962, 355-358

TEXT: As the data hitherto published for the heats of formation of Nb_2O_5 and Ta_2O_5 diverge greatly, the heat of combustion, $-\Delta U_B$ (24.3°C), of high-purity Nb and Ta in O_2 was determined calorimetrically after the content of impurities in the metal samples had been determined at two laboratories, and their effect was taken into account in calculating $-\Delta U_B$. (I) The content of impurities (% by weight) in niobium preparation 1 was 0.03 O; 0.03 N; 0.004 H; 0.02 C; 0.30 Ta; 0.09 Fe; 0.12 Ti; and 0.06 Si. In niobium preparation 2, it was 0.015 O; 0.01 N; 0.005 C; 1.27 Ta; 0.07 Fe; 0.12 Ti; and 0.04 Si. The maximum contents of Al, Mg, Mo, Mn, Ni, P, Pb, and Sn did not exceed 0.01% of each. Combustion took place in high-purity O_2 at 30 atm. The effect of moisture was ignored
Card 1/3

S/020/62/144/002/020/028
B101/B144

Standard heats of formation of ...

when determining the resulting $\beta\text{-Nb}_2\text{O}_5$. In calculating $-\Delta U_B$ (24.3°C), the effect of impurities was considered on the assumption that: (1) O, N, H, and C react with Nb to form Nb_2O_5 , NbN , NbH , and NbC , respectively, while the remaining impurities do not react with Nb; (2) none of the impurities reacts with Nb. The relevant corrections were within the experimental errors. It was found that $-\Delta U_B$ (24.3°C) = 2432.0 ± 2.0 cal/g of Nb. Hence, $\Delta H_{298}^\circ \beta\text{-Nb}_2\text{O}_5 = -453.5 \pm 0.4$ kcal/mole. (II) Tantalum preparation 1 contained the following impurities (% by weight): $6 \cdot 10^{-3}$ O; $1 \cdot 10^{-2}$ N; $3 \cdot 10^{-4}$ H; $2 \cdot 10^{-2}$ C; 0.12 Nb; 0.11 Ti; $3 \cdot 10^{-2}$ Fe; $< 4 \cdot 10^{-3}$ Si; $4 \cdot 10^{-2}$ W; and $1 \cdot 10^{-2}$ Mo. Tantalum preparation 2 contained $4 \cdot 10^{-3}$ O; $2 \cdot 10^{-3}$ N; $1 \cdot 10^{-3}$ H; $5 \cdot 10^{-3}$ C; 0.80 Nb; $< 5 \cdot 10^{-3}$ Ti; $< 2 \cdot 10^{-3}$ Fe; $< 3 \cdot 10^{-3}$ Si; $< 1 \cdot 10^{-2}$ W; and $< 1 \cdot 10^{-2}$ Mo. In each sample, the content of Al, Ni, and Mg was $< 1 \cdot 10^{-3}$. In sample 1, the content of Pb, Bi, Sn, Sb, and Cd was $< 1 \cdot 10^{-3}$, and in sample 2, it was $< 1 \cdot 10^{-4}$. In sample 2, the content of S and P was $< 2 \cdot 10^{-3}$. Combustion took place in O_2 at 10 atm.

Card 2/3

KORNILOV, A.N.; LEONIDOV, V.Ya.; SKURATOV, S.M.

Standard heats of formation of niobium and tantalum pentoxides.
Dokl.AN SSSR 144 no.2:355-258 My '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavleno akademikom V.I.Spitsynym.
(Niobium oxides) (Tantalum oxides) (Heat of formation)

L 20104-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/ENP(j)/ENP(t)/ENP(b) Pc-4/Pr-4/
 PS-4/PI-4/Pu-4 IJP(c)/RPL/AEDC(a)/SSD/AFWL/AS(mp)-2/AFMDC/ESD(t) JD/WM/JW/
 ACCESSION NR: AP4044442 JG/RM S/0076/64/038/008/2008/2012

AUTHOR: Kornilov, A. N. (Moscow); Leonidov, V. Ya. (Moscow); Skuratov, S. M. (Moscow)

TITLE: Standard heat of formation of tantalum pentoxide

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2008-2012 B

TOPIC TAGS: tantalum pentoxide, enthalpy, calorimetry, heat of formation

ABSTRACT: The purpose of this work was to resolve the discrepancy existing in literature for the heat of formation of Ta_2O_5 . For this purpose two different preparations of high purity tantalum in the form of ingots were used. Tantalum shavings were used for the determination in a calorimetric bomb. Traces of iron on the surface of tantalum, which is picked up during shaving of the metal, is removed by boiling with HCl for 0.5 hours. Other impurities, oxygen, CO_2 and H_2O were removed by passing Ta over heated cupric oxide at 600 C and ascarite. The fraction of tantalum oxidized in the bomb comprised 99.5-99.9% and it was determined with accuracy of $2-3 \cdot 10^{-2}\%$, from the amount of oxygen consumed at

Card 1/2

L 20104-65

ACCESSION NR: AP4044442

1050 In the course of 2.5-3 hours. It was determined that for the reaction 2Ta (cryst.) + $5/2 \text{O}_2$ (g) = Ta_2O_5 (α -modification). $\Delta H_{298}^0 = -489.3 \pm 0.4$ kcal
Orig. art. has: 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosov
Termokhimicheskaya laboratoriya im. V. F. Luginina (Moscow State University
Thermochemistry Laboratory)

SUBMITTED: 19Oct63

ENCL: 00

SUB CODE: GC

NO REF SOV: 005

OTHER: 010

Card 2/2

L 20105-65 EWG(j)/EWT(m)/EPF(c)/EFF(n)-2/EPR/EWP(j)/EWP(t)/EWP(b) PC-4/Pr-4/
 Ps-4/PI-4/Pu-4 IJP(c)/RPL/AEDC(a)/SSD/AFWL/AS(mp)-2/AFMDC/ESD(t) RD/WW/JW/
 JG/RM
 ACCESSION NR: AP4044443 S/0076/64/038/008/2013/2018

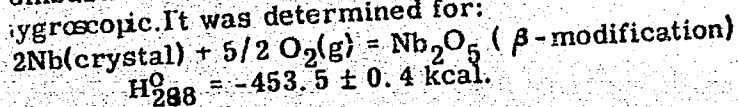
AUTHOR: Kornilov, A. N. (Moscow); Leonidov, V. Ya. (Moscow); Skuratov, S. M. (Moscow)

TITLE: Standard heat of formation of niobium pentoxide

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2013-2018

TOPIC TAGS: niobium pentoxide, enthalpy, calorimetry, heat of formation

ABSTRACT: The standard heat of formation of Nb_2O_5 was determined by a direct combustion method. Relatively pure Nb (low in O, N, and H) was placed in a calorimeter bomb for combustion in O_2 . To assure high accuracy, Nb was burned to completion (>99%). A special method was used to determine the completeness of the combustion because the combustion product Nb_2O_5 tends to fuse together and be hygroscopic. It was determined for:



Card 1/2

L 20105-65
ACCESSION NR: AP4044443

Orig. art. has: 2 graphs and 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
Termokhimicheskaya laboratoriya im. V. F. Luginina (Moscow State University
Thermochemical Laboratory)

SUBMITTED: 19Oct63

ENCL: 00

SUB CODE: GC, TD

NO REF SOV: 012

OTHER: 008

Card 2/2

LEONIDOV, YU. M.

Vladimir Province - Iridaceae

Instance of the appearance of *Sisyrinchium Angustifolium* Mill. in Vladimir Province.
Bot.zhur. 37 No, 4, 1952.

Monthly List of Russian Accessions. Library of Congress. November 1952. UNCLASSIFIED.

LEONIDOV, Yu.M.

Unusual vegetative shoot in the inflorescence of *Glyceria aquatica* (L.)
Wahlen, its structural characteristics and morphological significance.
Biol. MOIP. Otd. biol. 69 no.5:141-143 S-O '63. (MIRA 17:11)

LEONIDOV-YANOVSKIY, YU.

SHEVCHENKO, VI.: LEONIDOV-YANOVSKIY, Yu.

"Jules Verne's three lives" by K. Andreev. Reviewed by V. Shevchenko,
IU. Leonidov-IAnovskii. IUn. tekhn. no.5:74 My '57. (MIRA 10:6)
(Verne, Jules, 1828-1905) (Andreev, K.)

93-6-16/20

AUTHOR: Leonidova, A. I.

TITLE: New Achievements of the I. A. Yermolovich All-Purpose Team in the Construction and Erection of Derricks (Novyye uspekhi kompleksnoy brigady I. A. Yermolovicha po stroitel'stvu i montazhu burovykh)

PERIODICAL: Neftyanoye khozyaystvo, 1957, Nr 6, pp. 60-61 (USSR)

ABSTRACT: Construction of a derrick by specialized teams engages 20-22 workers and the entire work is divided among teams of excavators, derrick assemblers, mechanics, riggers, electricians, and gas and electric welders. Each team consists of 2-6 workers so that simultaneous construction of 10 derricks engages about 40 specialized teams. The author points out the following shortcomings in derrick construction by specialized teams 1) difficulty of managing the numerous teams 2) loss of time in transition from one task to another and 3) deterioration in quality of work resulting from decentralized supervision. Because of these shortcomings none of the derricks built by the derrick-building department (VMK) of the Drilling Trust of the Turkmen Petroleum Industry (Turkmenburneft') in 1955-56 was completed on time. In 1955 Yermolovich and Guzeyev organized derrick builders into an all-purpose team composed of three excavators, four derrick assemblers, three

Card 1/2

New Achievements of the I.A. Yermolovich All-Purpose Team in the Construction (cont) 93-6-16/20

mechanics, and one electric and gas welder. Each of these men was trained to perform several tasks on a construction job. In the last six months of 1955 this all-purpose team built 13 derricks (seven at accelerated rates) at the rate of 9.15 days per derrick as against 14 days required by specialized teams. In 1956 the all-purpose team made further progress and built 24 derricks (six at accelerated rates) although only 18 were required by the plan. The 1956 construction rates were 8.75 days per derrick as against 14.7 days required by specialized teams. As a result, Yermolovich's all-purpose team won the socialist competition first prize of 15 thousand rubles from the USSR Ministry of the Petroleum Industry (MNP SSSR). Yermolovich's all-purpose team shortened the construction time per derrick by six days and reduced the number of construction workers per derrick from 22 to 12. Members of the all-purpose team have benefited by receiving 13-20 percent more in wages than members of specialized teams. Yermolovich's team plans to shorten further the derrick construction time and reduce costs by, 1) greater mechanization of labor-consuming operation, 2) efficient distribution of materials and equipment at the construction site, and 3) construction of derricks by industrial methods. At present the derrick-building department of Turkmenburneft' is employing all-purpose teams in the construction of its derricks.

AVAILABLE: Library of Congress

Card 2/2

LEONIDOVA, A. I.

Training at the work area. Sots.trud. no.4:131-133 Ap '58.
(MIRA 11:4)

1. Tekhnoruk normativno-issledovatel'skoy stantsii ob'yedineniya
"Turkmenneft'."
(Turkmenistan--Petroleum industry) (Employees, Training of)